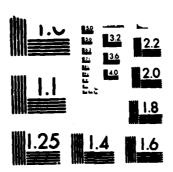
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A STUDY TO DEVELOP A PROCEDURE FOR ACCURATELY RECORDING THE TOTAL NUMBER OF MAN-HOURS EXPENDED ON AUDIT ACTIVITIES AT BROOKE ARMY MEDICAL CENTER FORT SAM HOUSTON, TEXAS

A Problem Solving Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree

of

Master of Health Administration

Ву

Major Robert F. Bories, Jr., MSC

August 1978



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August 1978 Thesis 16. SUPPLEMENTARY NOTATION

17.	COSATI	CODES	18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Health Care; Medical and Patient Care Audits; Management
19. ABSTRACT	(Continue on	reverse if necessary	and identify by block number)

Medical and patient care audits are required on a regular basis for hospitals accredited through the Joint Commission on Accreditation of Hospitals (JCAH). Although these audits are desirable, the procedures involved require a significant number of man-hours. This study was conducted to develop a procedure for accurately recording the total number of man-hour expended on audit activities. The author analyzes other audit related information, and uses a questionnaire survey to arrive at his final conclusions. He then makes detailed recommendations on the implementation of a system to record the number of man-hours expended in audit activities.

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I. INTRODUCTION

The last two years have been marked by increasing levels of activity in the areas of medical and patient care audits at Brooke Army Medical Center (BAMC). While the Joint Commission on Accreditation of Hospitals (JCAH) requires a minimum of just ten audits per year for a hospital with the number of admissions BAMC experiences, forty-seven such audits were accomplished in 1976. Although audits are desirable as well as mandatory for accreditation, the procedures require a significant expenditure of man-hours. Those involved include physicians, dentists, nurses, clinical dietitians, occupational therapists, medical record administrators, pharmacists, social workers, clerical personnel and others throughout the organization. Few of these individuals are assigned to perform audit activities as their major duty; yet, many are becoming heavily involved in this task as greater emphasis is placed on enhancing the quality of care.

Conditions which prompted the study

It was against this backdrop that the BAMC commander requested an approximation of the number of man-hours

spent in audit activities during the months of May and June 1977. This request was made at a meeting of the BAMC Executive Committee on 22 July 1977. In response, questionnaires were sent to the various departments requesting them to provide the desired information. During the course of this investigation, it became apparent that none of the departments surveyed was maintaining a record of the time spent in audit activities. Accordingly, the information they provided was, at best, an estimate. Nonetheless, the figures were compiled, and a report was prepared and presented to the commander at the next meeting of the Executive Committee which occurred on 2 September 1977. A copy of the report is attached as Appendix A.

Although the commander was pleased to have the information contained in the report, he realized its limitations and the fact that the data therein relied on the recollection of a few individuals. After some discussion, he requested that a system be established that will capture and record the number of man-hours being expended in audit activities and that it do so accurately and objectively.

Statement of the problem

The problem is to develop a procedure for accurately recording the total number of man-hours expended on audit activities at Brooke Army Medical Center.

Assumptions

It is assumed for the purposes of this study that BAMC will continue to conduct medical and patient care audits on a large scale and that no external events, such as massive curtailments in personnel or services which could reduce the number of audits performed, will occur.

Literature review

Although there is a plethora of literature on the subject of work measurement, none on the work of medical audit is readily available. From the time of Frederick Taylor to the present, the bulk of the material written on work measurement has been geared to industrial applications. While some of the basic principles are relevant, the details lose their efficacy when applied in the hospital. For example, J. K. McNally enumerates six tools for measuring work hours. These are historical data, expert opinion, work logs, wristwatch studies, work sampling and standard data. While his article is well written and quite apropos in many settings, only the section dealing with work logs has possible application to measuring medical audit activities. Dennis A. Whitmore in his book on measurement and control of work maintains that measurements of work must be objective to be useful. He also states that it is not the work itself but the time required to accomplish it that is

being measured.² These principles are relevant and were considered during the course of this study. Another book on work measurement, this one by Owen Gilbert, set forth another principle which is both practical and goal oriented. He states that the purpose of method study is to make the most effective use of available resources—people, space, plant, materials and money.³ Both Whitmore and Gilbert devote most of their works to the actual techniques of measurement as does Virgil H. Rotroff, but these techniques were not applicable to the problem under study.

While the techniques of work measurement are discussed at great length in the literature of industry, the techniques involved in audit occupy a significant portion of all the literature concerning audits. Paul R. Kressler, for example, discusses various ways to organize the audit function within the hospital. He suggests that small rural hospitals might be served best by an audit function which is a nondepartmental organization. Larger hospitals with more structured medical staffs may profit with a departmental organization for audit, while hospitals with large, complex medical staffs and teaching programs may wish to employ a subspecialty organization for their audit activities. Lowe discusses the use of the Professional Activity Study to support audit functions, and Beezley suggests a format to log

the various phases of each audit so that the medical staff can tell at a glance the status of all audits in progress. These are but a few of many articles dealing with the methodologies of audits.

Another area which is discussed in the audit literature is the value which is placed on such activities. Dr. Hilda Kroeger states that one of the major benefits which accrues to the physician engaged in audit activities is the opportunity to see what other physicians are doing. By recognizing gaps in the records of his peers, he may tend to improve his own record keeping. An article by Christoffel and DuBois suggests that the audit process should cover all physicians who practice in the hospital and that the information so gained can provide valuable insights into physician performance. 9

An area which is becoming more prominent in the literature is the cost of conducting an audit program. While much has been written on the mechanisms, little has appeared to date on audit costs. One article, however, outlined the procedure by which the Duke University Medical Center narrowed their costs to the point where they established that the cost per record audited was ninety-six cents. One article by Hauge discusses the sensitive issue of compensating physicians for auditing activities. The three methods discussed were fixed rate per hour, annual salary and a per committee session basis.

Interestingly, the article indicates that most hospitals were not compensating physicians for audit activities as of March 1975. 11

A subject which is receiving more attention as time passes is the problems inherent in conducting auditactivities. Dr. John W. Bell states that there are special audit problems in small hospitals. One of there is that physicians who are already overburdened with committee activities may consider audit as another straw on their backs. In addition, funds for instructional workshops and periodicals on audit are quite likely to be limited. Other barriers to effective audit are enumerated by R. H. Barnes. These include physician attitudes toward government, the fact that reviewing care is different from the practice of medicine, the lack of existing peer review in many institutions and a failure on the part of many medical staffs to resolve identified clinical problems. 13

While none of the categories of audit literature examined above dealt specifically with the measurement of man-hours expended in audit activities, the review provided a valuable insight into the many variables, complexities and problems of the audit process. It served to lay the groundwork for what was to follow.

Research methodology

The initial step in the research was to investigate

the background of audit activities in Army Medical Department (AMEDD) hospitals. It is important to know the requirements and the constraints which influence the audit process at BAMC as directed by higher head-quarters. The primary source of information in this area was a knowledgeable individual at the headquarters of the U. S. Army Health Services Command (HSC).

The next area to be investigated was the manner in which audits are conducted at BAMC. This would indicate which areas of the hospital had the largest expenditure of man-hours and the actual stages of an audit. To obtain these data, personnel in the Patient Administration Division (PAD) were interviewed.

An attempt was made to obtain comparative data from other AMEDD treatment facilities to determine what systems were in use elsewhere to record the man-hours spent in audit activities. Telephone contact with health care administrative residents at various facilities was the method used in this regard.

A questionnaire was the primary source of information on what BAMC's personnel are accomplishing at present in audit activities and the type of man-hour recording system they would prefer. The impetus behind its use was a desire to let the staff express their views on the type of system that would be most amenable to their activities. The results were analyzed and formed the basis

of the final recommendation.

Criteria

The final recommendation must be one that can be implemented without creating an excessive degree of administrative burden on those whom it affects. It should be fashioned in such a manner that its functioning will meet with a minimal amount of resistance from people in the system.

In addition to these aspects of the mechanics of the recommendation, the results produced by the system should be accurate and they should be able to be provided to the commander or any other user in a format that will permit them to be used in practical situations. For example, the information revealed may be used to justify staffing actions in manpower surveys; therefore, the data should be in a format that can be adapted to such application.

FOOTNOTES

- ¹J. K. McNally, "How to Find Manpower Levels/ Needs Before Budgeting," <u>Hospital Financial Management</u> 30 (December 1976): 34-39.
- Dennis A. Whitmore, <u>Measurement and Control of Indirect Work</u>, (New York: American Elsevier Publishing Company, 1971), p. 17.
- ³Owen Gilbert, <u>A Manager's Guide to Work Study</u> (London: John Wiley and Sons, 1968), p. 5.
- Virgil H. Rotroff, <u>Work Measurement</u> (New York: Reinhold Publishing Corporation, 1959).
- ⁵Paul R. Kessler, "Organizing for Audit," Quality Review Bulletin, January-February 1976, pp. 3-36.
- ⁶John A. Lowe, "PASport," Quality Review Bulletin, August 1977, pp. 20-31.
- ⁷Deborah C. Beezley, "Audit Logs and Memory Jogs," Quality Review Bulletin, May 1977, p. 5.
- ⁸Hilda H. Kroger, "Combined Committee Approach to Quality Patient Care," <u>Medical Record News</u>, April 1968.
- ⁹Tom Christoffel and John J. DuBois, "Data Profiles: One Way to Assess Physician Representation in Hospital Audit Studies," <u>Quality Review Bulletin</u>, March 1977, pp. 28-30.
- 10 Paul Ahlers, Robert J. Sullivan, William E. Hammond, Edward L. Walter, and H. Dennis Tolley, "The Cost of Auditing Outpatient Records," Southern Medical Journal 69 (October 1976): 1328-1330.
- 11 James Hauge, "Compensating Physicians for Auditing Activities," <u>Hospitals</u> 50 (May 16, 1976): 123-124.

- 12 John W. Bell, "Audit Problems in the Small Hospital," Quality Review Bulletin, June 1977, pp. 4-22.
- 13R. H. Barnes, "How to Overcome Barriers to Effective Audit," <u>Hospital Medical Staff</u>, May 1976 pp. 1-6.

II. DISCUSSION

Background of audit activities in AMEDD facilities

The impetus behind the conducting of medical audits in AMEDD treatment facilities derives from the policy that all such facilities in the fifty states will comply with the standards of the Joint Commission on Accreditation of Hospitals. This policy is stated in Army Regulation 40-2. Beginning in late 1973 and continuing through 1974, the JCAH began placing increased emphasis on medical audit, and the AMEDD took steps to meet the challenge. The Surgeon General and the Commander, Health Services Command worked to assist AMEDD facilities in preparing themselves for the new requirements. Committees were formed and a seminar was held in conjunction with the JCAH in the Washington, D. C. area in May 1974. In addition, the Patient Administration Division and Force Development Division of HSC collaborated to arrive at standards for staffing ratios in AMEDD facilities which provided for additional personnel to assist in audits. These efforts culminated in the publication of Change 2 to Army Regulation 40-400 in October 1974. It is this document which specifically directs AMEDD medical treatment facilities to conduct

medical audits in compliance with the standards set forth by the Joint Commission on Accreditation of Hospitals.

Audit program at Brooke Army Medical Center

To obtain information on the manner in which medical audits are performed at BAMC, an in-depth interview of the Medical Record Administrator responsible for this function in the Patient Administration Division (PAD) was conducted. At the beginning of each year, a schedule of audits to be conducted during the year is compiled by the PAD personnel. The audit topics are submitted by the chairmen of the various medical care evaluation and patient care evaluation subcommittees based on the number of cases available for review. A copy of BAMC's 1978 audit schedule is attached as Appendix B. An examination of the schedule reveals that thirty-six audits are anticipated. Of these, the Department of Medicine will be responsible for fifteen (since cancer care and respiratory therapy are under its cognizance); the Department of Surgery will have eight; the Department of Pediatrics will conduct five, and the Departments of Psychiatry and Obstetrics/Gynecology will each conduct four.

Approximately twenty-one to thirty days in advance of the scheduled audit, the Medical Record Administrator (MRA) will request criteria from the appropriate de-

partment or service. The audit committee chairman usually assigns a member of the committee the task of establishing appropriate criteria. When the criteria are received by the MRA, a pre-test is conducted and any problems that surface are resolved in coordination with the department or service chief. After that is accomplished, Audit Sheet 1 is typed. This gives basic information on the audit to include the number of records to be reviewed, the study topic and patient identification data.

At this point, the Inpatient Data System (IPDS) files are checked for a list of all patients with the diagnosis being audited for the appropriate time per-The IPDS register number and patients' names are matched to enhance record retrieval and to serve as a screening process since one IPDS code may encompass several procedures. When the list of records to be audited is finalized, charge-out guides are prepared and the records are pulled. Data retrieval sheets are typed for each record. These sheets contain the criteria for the audit topic and appropriate blocks for checking off how the record meets the various criteria. A copy of a data retrieval sheet used for the audit topic of bronchoscopy is attached as Appendix C. Once all the data retrieval sheets are typed, the MRA performs the actual retrieval of the information by

checking the appropriate blocks for each record.

Following the data retrieval, cases with deficiencies are noted and the first part of Audit Sheet 2 is prepared. This sheet illustrates the deficiencies which have been picked up during the retrieval. Both Audit Sheets 1 and 2 are reproduced for presentation at the meeting of the audit subcommittee. Here, the deficiencies are discussed and categorized as "justified" or "unjustified." On those which are determined to be unjustified, a disposition form to that effect is sent to the responsible physician or service. Based upon the committee's findings, the second half of Audit Sheet 2 is completed. This is an analysis of the variations noted on the first half of the sheet. Attached as Appendices D and E are copies of Audit Sheet 2 for the bronchoscopy audit; Appendix E shows the sheet with both halves completed.

The next step is perhaps the most important one in the audit process, for it is in the preparation of Audit Sheet 3 that patterns can be detected and that follow-up actions are documented. The whole impetus behind medical audit is to improve the quality of care. To identify problem areas serves no useful purpose if proper follow through is not accomplished. After Audit Sheet 3 is prepared, it is circulated to obtain the signatures of the audit committee chairman, the depart-

ment chief, the Chief of Professional Services, the Chief of the Department of Nursing, the Executive Officer and the Commanding General. A copy is provided to the appropriate service chief. Audit Sheet 3 for the bronchoscopy audit is at Appendix F.²

An additional review of the audit process in general occurs on a monthly basis at the meetings of the Executive Committee. These meetings are chaired by the Commanding General and include the Executive Officer, the Chief of Professional Services and the Chief of the Department of Nursing. At these meetings, the minutes of the Medical Care Evaluation Committee meeting and its audit subcommittee meetings are reviewed. An area of special concern is the carrying over of actions from one meeting to another, lest some area of importance in quality patient care be forgotten from month to month.

The procedures involved in audit activities at BAMC are extensive and time consuming. The information given above traces the process of one audit only. It must be remembered that while the actions noted pertain primarily to PAD personnel, others throughout the hospital are continually involved in audit activities. Secretaries are taking minutes and typing them. Committee members are working on criteria. Subcommittees are meeting. These activities and many others associated with

audits transpire on a daily basis, and they share a common denominator -- they all take time, and this time should be documented so that adequate staffing levels can be sought.

Comparative data from other AMEDD facilities

An attempt was made to determine whether or not any other AMEDD treatment facilities were keeping a record of the man-hours they were spending in audit activities. It was hoped that some system already in existence within the AMEDD might be adaptable for BAMC use. Two medical department activities (MEDDACs) and four medical centers (MEDCENs) were selected to be contacted because the MEDCENs by virtue of their total admissions are required to perform more audit studies. It follows that their need for recording man-hour involvement would also be greater.

The MEDDACs chosen were those at Fort Huachuca, Arizona, and Fort Bragg, North Carolina. While the health care administration residents at both installations reported that audits were being performed, they indicated that no records pertaining to man-hour expenditures were being kept on these audits.^{3,4}

Much the same was true of the four MEDCENs contacted. The health care administration residents at William Beaumont, Walter Reed, Dwight David Eisenhower and Fitzsimons Army Medical Centers reported the same

information as that obtained from the MEDDACs. 5,6,7,8

It appears, then, that there is little to be gained from other AMEDD facilities in dealing with this problem.

Survey procedures

To determine what BAMC personnel are accomplishing at present in audit activities as well as to gain insight into the type of man-hour reporting system that would be most acceptable to them, a nine-item question-naire was utilized. Initially, a series of interviews was anticipated for this effort, but it was decided that a questionnaire could reach more members of the staff and provide more objective data.

In an effort to achieve optimum validity and to make the survey as meaningful as possible, a pre-test was conducted on a limited scale. In acknowledgement of the fact that the Departments of Medicine and Surgery have the greatest amount of input to the audit process at BAMC, these departments were selected for the pre-test. The administrative officers of each department were afforded an explanation of the study and asked to assist by distributing ten questionnaires to personnel in their departments who participate in the audit process to some degree. Each of the twenty questionnaires bore the following phrase in bold letters on the front: "THIS IS A PRE-TEST OF THE QUESTIONNAIRE.

IN ADDITION TO ANSWERING THE QUESTIONS, PLEASE OFFER ANY COMMENTS OR SUGGESTIONS THAT MIGHT HELP WITH THE PROJECT. THANKS." Of the twenty pre-test question-naires that were distributed, seventeen or 85 per cent were returned. None of the individuals who responded chose to offer any comments. Accordingly, the questionnaire remained unchanged for the actual survey.

The questionnaires were distributed through a disposition form signed by the Deputy Commander. A total of 246 questionnaires were distributed in this manner and the Chief of Occupational Therapy indicated that five additional forms were reproduced by her staff so that all of her personnel who participate in audits would be covered. This resulted in a total distribution of 251 questionnaires. A copy of the disposition form and the questionnaire are attached as Appendix G.

A total of 150 questionnaires were returned. This is 59.8 per cent of those distributed. Of the 150 which were returned, seven were considered to be invalid since the instructions in the third question were violated; that is, people who gave a "No" response were not supposed to answer questions four through nine. In these seven cases, a "No" response was given and the rest of the questions were answered. After removal of the seven invalid questionnaires, 143 remained for analysis.

On questions one and two, there were exactly 143 responses while on numbers three through nine the number of responses varied. This is because some individuals might not have answered a particular question or might have checked more than one response on another. Accordingly, the analysis of each question is based on the responses to that question alone rather than the total number of questionnaires returned.

Survey findings

The first two questions dealt with the identity of the respondent. Question one asked if the individual was a military officer, a military enlisted person or a civilian. Of the 143 responses, 106 or 74 per cent were from officers; seven responses or 5 per cent came from enlisted personnel while thirty or 21 per cent were from civilians. Since the disposition form which accompanied the questionnaires requested that they be distributed to personnel involved in the audit process, it would appear that the vast majority of those involved are officer personnel. This stands to reason since most of our staff physicians and ancillary treatment personnel are officers. These figures have a significant impact in the cost area inasmuch as the military officers are the highest paid of the three categories.

Question two is interesting in its portrayal of

the extent of the audit process throughout the hospital. Thirteen different duty positions plus a blank for "Other" were checked. They included staff physician, resident, dietitian, social worker, psychologist, occupational therapist, physical therapist, dentist, nurse, pharmacist, medical records specialist, secretary, clerk-typist and, as mentioned before, other. The greatest number of responses was from staff physicians with forty-eight or 33.6 per cent of the total. They were followed by nurses with fifteen responses which is 10.5 per cent, and the next largest category was secretaries with twelve responses or 8.3 per cent of the total. The other categories ranged from three responses for 2.1 per cent registered by both pharmacists and medical records specialists to the residents with eleven responses and 7.7 per cent of the total.

The third question narrowed the responses somewhat and this was its intent. It asked if the respondent had participated in formal audit activities at BAMC within the past year. If the answer was negative, the respondent was asked not to complete the remaining questions but rather to return the questionnaire. Since the questions to follow dealt with the audit process itself and the respondents' opinions on enhancing it, it was felt that the individuals answering these items should have had recent interaction with the

system. Of the 140 responses given, lll individuals or 79 per cent indicated that they had participated within the past year. It should be noted, then, that the survey results and opinions expressed in questions four through nine are based on responses from lll individuals who have interfaced with the audit process at BAMC within the past year and thus have at least some degree of familiarity with it.

Question four asked the respondents to indicate whether their involvement in audit is participative such as setting criteria and attending meetings or administrative such as obtaining and checking records and typing results. It is interesting to note that one individual did not respond to this question, but there were 124 responses. With one person abstaining, this means that 110 answered, so fourteen people checked both answers. There is no problem in this regard since some individuals do indeed fulfill both roles in the process, the medical record administrator being a prime example. Of the ninety-six personnel who indicated that their involvement was entirely one way or the other, eighty-four or 87.5 per cent stated they played a participative role while twelve or 12.5 per cent stated that their involvement was administrative. This suggests that the number of personnel actively engaged in the process of determining quality of care through the audit mechanism far outweighs the number of personnel who administer the process and record its actions.

Question five asked the respondents to estimate the hours per month they were spending in audit related activities. The choices were 1-5, 5-10, 10-20 and 20+. The responses are depicted below for clarity.

Choice	Number of Responses	Per Cent
1-5 5-10 10-20 20+	95 8 3 5	85.6 7.2 2.7 4.5
Totals	111	100.0

The vast majority of those responding to this question indicated that they spend from one to five hours per month in audit related activities. On first glance, it would seem that these figures show a low expenditure of man-hours. However, even if the lower figure in the range, one hour, were multiplied by ninety-five respondents, the resultant ninety-five hours per month is significant for it represents more than two man-weeks per month. If the same procedure is applied to the other three choices, the results are forty, thirty and loo hours, respectively. When these are added to the ninety-five hours from the first choice, the figures indicate that lll respondents are spending at least 265 man-hours per month in audit related activities. This

figure gains in significance when it is considered that one individual working an eight-hour day spends roughly 168 hours per month on the job.

Question six was intended to show the extent to which records were or were not being kept on the number of man-hours expended on audit activities. Of 112 responses to this question which asked the respondents if they were keeping such records, eighty-two personnel or 73 per cent responded "No." Thirty individuals or 27 per cent responded "Yes." Those with an affirmative response were categorized by their duty positions. Seven were from nurses. Six were from social workers. Five were from occupational therapists, and three came from staff physicians. Three were from psychologists, while secretaries and medical record specialists each had two. Finally, one was recorded by a dietitian and one by a pharmacist. The questionnaire asked those who responded "Yes" to describe briefly the records they were keeping so that these answers could be examined to determine if the records are complete and if they might be useful elsewhere in the organization. Unfortunately, four individuals did not describe their systems, and six more indicated that their records consisted of the typed minutes of audit committee meetings they attended. If attendance at such meetings is the only audit function they perform, then the minutes are

an accurate record; however, it is doubtful that those on audit committees restrict their audit activities to these meetings alone. On the other hand, three of the social workers who responded did not describe their systems but rather alluded to the impact such records would have on a Schedule X for manpower survey purposes. The most frequent description, which occurred on nine of the thirty "Yes" responses, indicated that the records were being kept as a part of a weekly or monthly activities report. These reports appear to contain the type of information that is maintained for manpower reporting purposes, and it shows that there is some effort being made to keep a record of the man-hours expended in audit activities. However, it must be remembered that 73 per cent responded to the effect that they were not keeping such records at all. It appears, then, that there is sufficient room for improvement.

The last three items on the questionnaire, numbers seven, eight and nine, are especially important because they ask for the respondents' opinions on just how records of audit man-hours should be kept. One of the criteria for this study is that its final recommendation be one that meets with minimal resistance from those who will be affected by the system. The answers to these last three questions should be viewed with this in mind.

The questionnaires from the Department of Obstetrics/Gynecology complicated this issue to some degree. Instead of completing the fifteen questionnaires they had been furnished, they prepared a composite response utilizing one form. For example, on question one pertaining to employment status, the figure "13" appeared beside "Military officer" and the figure "2" was in the blank next to "Civilian." This presented no problems in questions one through six. However, numbers seven, eight and nine were left blank with a notation that stated, "Time devoted to audit activities is considered to be a part of the patient care and physician education mission of this department. The number of hours involved do not justify additional hours trying to recover audit activity workload." The point is well taken; however, another criteria of the study is that the final recommendation be one that will not place an excessive administrative burden on those who are involved with it. If this criterion is satisfied, the concern expressed above should not be justified.

Question seven asked for the respondents' opinions on whether the reporting of audit man-hours should be accomplished as a part of the audits themselves or included in the figures that are accumulated for manpower and force development purposes. There were ninety-eight responses to this question with an overwhelming number

choosing the second response reference manpower and force development figures. Twenty-nine individuals or 29.6 per cent chose the audit response while sixty-nine personnel or 70.4 per cent opted for the latter choice.

The answers to questions eight and nine tend to bear out what the respondents indicated in question seven. Question eight asked who was in the best position to document the audit man-hour figures, and the choices were "committee chairman", "committee recorder", "each participant", "PAD personnel" and "secretarial staff." There were 102 responses and they were divided as follows: "committee chairman" had ten for 9.8 per cent; "committee recorder" was checked twenty-five times for 24.5 per cent; "each participant" had the largest number of responses at forty-nine which is 48.0 per cent; "PAD personnel" was indicated on eight questionnaires for 7.9 per cent, and ten responses were shown for "secretarial staff" which is 9.8 per cent. The significantly greater response for "each participant" coincides with the views expressed in question seven with the method of choice for recording man-hour figures being the manpower option. The emphasis in recording workload data for manpower purposes is on the individual's keeping an accurate account of how his duty time is spent, and based on the responses to questions seven and eight, a system designed with these principles in mind would appear to be more acceptable to those involved.

In like manner, the responses to question nine support the opinions expressed in numbers seven and eight. This question asked the respondents to state their opinions on the best vehicle for reporting the There were time they were spending in audit activities. ninety-five responses to this question. The first choice was "Notation on an existing form used in the audit." This netted twenty-nine responses or 30.5 per cent of the total. The second choice was "Notation on an existing form used for manpower reporting." This was by far the most popular answer among the four with forty-nine responses for 51.6 per cent of the total. The third option was "Notification on a separate form" which had eleven responses which represents 11.6 per cent of the answers to this question. The final choice was "Telephonic reporting to a designated individual." There were six responses for 6.3 per cent of the total. Again, the majority of the responses favor a system designed around the manpower reporting mechanism, which certainly appears to be the method of choice based upon the responses to questions seven, eight and nine.

FOOTNOTES

- ¹Interview with Betsey T. Cunningham, U. S. Army Health Services Command, Fort Sam Houston, Texas, 21 March 1978.
- ²Interview with Alicia C. Garza, Patient Administration Division, Brooke Army Medical Center, Fort Sam Houston, Texas, 30 March 1978.
- ³Telephone interview with Major George R. Beringer, Fort Huachuca, Arizona and Fort Sam Houston, Texas, 24 January 1978.
- Telephone interview with Major Michael E. Averbuch, Fort Bragg, North Carolina and Fort Sam Houston, Texas 14 February 1978.
- ⁵Telephone interview with Captain Edmond B. Cherry, III, Fort Bliss, Texas and Fort Sam Houston, Texas, 23 January 1978.
- Telephone interview with Major Terral L. Rodman, Walter Reed Army Medical Center, Washington, D. C. and Fort Sam Houston, Texas, 13 February 1978.
- ⁷Telephone interview with Major Philip L. Dotson, Fort Gordon, Georgia and Fort Sam Houston, Texas, 13 February 1978.
- ⁸Telephone interview with Major James M. Foster, Fitzsimons Army Medical Center, Denver, Colorado and Fort Sam Houston, Texas, 21 March 1978.

III. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Medical audits are mandated by Health Services Command in keeping with the standards set forth by the Joint Commission on Accreditation of Hospitals. These audits appear to be a permanent fixture in AMEDD treatment facilities inasmuch as the AMEDD holds that all such facilities will comply with JCAH standards and the JCAH is placing an increasing amount of emphasis in this area. In fact, BAMC recently completed the JCAH on-site survey, and the focus on audit was quite evident. For example, one complete audit study had to be sent to the main office of the JCAH approximately four months prior to the survey. This audit was studied by JCAH personnel and the entire audit process was scrutinized by the on-site surveyors. This is the first year that such a procedure was required and it is indicative of the emphasis being placed on audit by the JCAH. There is no foreseeable end to this pattern, and it is highly probable that the requirements to accomplish audits will continue. Accordingly, manhours will be expended in this area for some time to come.

Another conclusion that may be drawn from the information gathered relative to the audit program at BAMC is that the process is complex and time consuming. It requires a great deal of effort on the part of a variety of personnel, and these efforts result in a significant expenditure of man-hours. The results of the process are encouraging in that patterns of care which require modification can be detected and followup actions are taken as the result of audit findings. In fact, the physician who was on the JCAH survey team which recently assessed BAMC commented that the audits he viewed were the best he had encountered in his experience as a JCAH surveyor. 1 Since these procedures have been effective and provide a means of improving the quality of care, the work that is involved in their accomplishment should be documented so that staffing levels to insure their continuance can be sought.

From the checks made of six other AMEDD medical treatment facilities, it does not appear that the number of man-hours expended in audit activities are being recorded elsewhere in the command. Accordingly, an analysis of how other systems might be working in similar situations is not possible. The system recommended by this study will thus be unique to BAMC and designed especially for it.

The survey questionnaires provided data from which

a number of conclusions may be drawn. The first question gave a strong indication that most of the personnel at BAMC who participate in audit activities are officers. Since they are paid more on the average than enlisted personnel or civilian employees, the cost implications are significant and the man-hours being expended on audit activities are expensive ones. Since funding is an area of great concern in the management of BAMC, it would be advantageous to know how many of these expensive man-hours are being spent on audit activities.

Question two illustrated how wide the scope of audit is at BAMC. A wide variety of duty positions were represented in the responses; thus, any recommended system for recording audit man-hours must be one that can be implemented throughout BAMC rather than one that would be appropriate only in specific areas.

Responses to question four showed that most of those who are involved in BAMC's audit program consider their input to be participative rather than administrative, although a few individuals felt that their roles were mixed between the two categories. Any system that purports to record the total number of man-hours spent in audit activities must be able to capture time spent in both areas.

Most of those who responded to the survey indicated

that they spend from one to five hours per month in audit related activities. However, there were respondents who stated that they spend a great deal more. When the number of respondents to each item of the question is multiplied by the number of hours for that item, a minimum figure of 265 man-hours per month results, and this is based on just the number of personnel who responded to the survey. The conclusion is that a significant number of man-hours are being spent in audit activities and the exact number should become available through the system to be recommended by this study.

As of the time the questionnaires were submitted, few of the personnel responding were keeping a record of the number of man-hours they were spending on audit. There is definitely not a system for compiling such records in BAMC at present. It is noteworthy, however, that most of those few personnel who are keeping such records are doing so in a manner that lends itself to manpower and force development actions.

This ties in with the results from the last three questions which asked for individual opinions about how a recording system might be best designed. Based upon the survey results, one would conclude that a system utilizing manpower figures will be a more acceptable alternative than one which would be included

in the audits themselves. Furthermore, the concensus of opinion among the respondents was that each participant in the audit process is in the best position to document the man-hours he or she spends in such activities. Likewise, the conclusion to be drawn from the survey responses relative to the best vehicle for recording these man-hours is that a system incorporating an existing form used for manpower reporting will meet with far less resistance than any of the other proposed systems. Since this is directly related to one of the criteria for the study, it is a consideration that must be weighed carefully.

Recommendations

It is recommended that all departments, divisions and services which have an input to the audit process be directed to record the man-hours they expend in such activities. To accomplish this, it is recommended that the recently published BAMC Command Policy Number 35 entitled "Man-hour and Workload Data," a copy of which is attached as Appendix H, be changed to reflect this mandate. In its present form, the functional areas for which Schedules X are prepared are directed to maintain man-hour and workload data on a continuous basis, but the breakout of specific duties is left up to the various supervisors, and this is generally appropriate. However, since the recording

of audit related man-hours is an item of command interest, this requirement should be levied. These recommendations satisfy the criteria established in the early stages of the study, and they coincide with the opinions expressed on the questionnaires. The criterion of a system that creates a minimal administrative burden is met since the various offices have been directed to maintain man-hour data. The criterion of a system that meets with minimal resistance should be satisfied as well, especially since these recommendations agree with the majority of the opinions expressed in the survey.

An additional recommendation is that the policy be announced by the commander at the Joint Staff Conference immediately preceeding its implementation. This will demonstrate to the staff that the ecording of audit related man-hours is an item of command interest, and it will give them the opportunity to ask any questions that might arise.

The final recommendation is that all of the organizational elements participating in the audit process be required to furnish their man-hour figures to the commander approximately ninety days after the implementation of the policy. This will provide a vehicle for evaluating the effectiveness of the system and may identify problem areas which need to be resolved.

These recommendations should provide for a system of recording the man-hours expended in audit activities at Brooke Army Medical Center that will be accurate and will furnish information in usable form.

As the quality of care at BAMC continues to be enhanced by the audit process, the documentation of these efforts can be enhanced as well.

FOOTNOTE

¹Francis Williams, M.D., Joint Commission on Accreditation of Hospitals, remarks at summation conference at Brooke Army Medical Center, 28 March 1978.

APPENDICES

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL AFZG-MDZ-X

SUBJECT

Man-Hours Involved in Audit Activities

TO CG, BAMC

FROM HCA Resident

DATE 2 Sep 77

CMT 1

 The information depicted below displays the man-hours expended on medical and patient care audits for the months of May and June 1977.

Dept/ Service	Officer Man-Hours	Enlisted Man-Hours	Civilian <u>Man-Hours</u>	Category Unspecified	Total Man-Hours
Clinical Dietetics	17.75				17.75
Social Wk	3.00			10.00	13.00
Medicine	160.00	4.00	148.00		312.00
Pharmacy	16.00				16.00
OB-GYN	9.50	11.25	3.00		23.75
Psychiatry	15.00		12.00		27.00
Denta1				18.00	18.00
Surgery	46.00		154.00		200.00
Nursing	22.00			74.00	96.00
Phys Med	19.00				19.00
Pediatrics					0.00 *
Grand Total					742,50

* Pediatrics did not audit in May and June.

2. In addition to these figures, personnel in the Patient Administration Division spend 438 man-hours per month in audit activities. This time is divided among the Chief of the division, two medical records administrators, and one medical records technician. If these man-hours for May and June are included, the total number of man-hours expended in audit activities is 1,618.50.

Robert 7. Brices Jr. ROBERT F. BORIES, JR.

MAJ, MSC

Administrative Resident

38

CF: XO **CPS**

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL

SUBJECT

AFZG-MDP-AD

REVISED AUDIT SCHEDULE for 1978

TO See Distribution

FROM C, Med Rec Admin PAD DATE 25 January 1978 CMT I M. L. Cantu/acg/5804

An audit schedule was sent to you on 20 January 1978. Due to discrepancies, revisions were made. Please disregard the previous schedule and plan your audit meetings according to the following:

JANUARY			
10	MCE	Cancer Care	Malignancies, Random Sample
19	MCE	Psychiatry	Schizophrenia, Paranoid/Undifferentiated
			• •
FEBRUARY			
-8-15	MCE	Pediatrics	Patent Ductus Arteriosus
9 ′	Process	Surgery	Surgical consent forms
23	MCE	Medicine	Oat Cell Carcinoma of the Lung
			_
MARCH			•
9	MCE	Surgery	Caldwell-Luc Procedure
16	MCE	Respiratory Therapy	IPPB
23	Process	Medicine	Bronchoscopy
APRIL			
5	Process	Pediatrics	TB Screening
11	MCE	Cancer Care	Malignancies, Random Sample
13	Process	Surgery	Consult forms
25	MCE	OB/Gyn	Labor, with Pregnancy
<u>MAY</u>			ı
2	Process	OB/Gyn	Discharge Planning
11	MCE	Surgery	Open Mitral Valvotomy
18	MCE	Psychiatry	Mixed Personality Disorder
Tom			
JUNE 8	DOE	Pediatrics	Cantin Amthuitia
_	PCE		Septic Arthritis
15 22	MCE	Respiratory Therapy Medicine	Ultrasonic Nebulization
22	MCE	medicine	Steven Johnson's Syndrome
JULY			
11	MCE	Cancer Care	Malignancies, Random Sample
13	MCE	Surgery	Cholecystectomy
20	PCE	Surgery	Cholecystectomy
	102		0.14200,00000,
AUGUST			•
1	MCE	OB/Gyn	Documentation of PAP Smear
_ 9	MCE	Pediatrics	Septic Arthritis
17	PCE	Medicine	Diabetes Mellitus
24	MCE	Medicine	Diabetes Mellitus
		39	

AFZG-MDP-AD

SUBJECT: Revised Audit Schedule for 1978

SEPTEMBER			•
7	MCE	Respiratory Therapy	PT, Frappage & Postural Drainage
14	MCE	Surgery	General Anesthesia
21	MCE	Psychiatry	Adjustment reaction
OCTOBER			
5	PCE	Psychiatry	Adjustment reaction
10	MCE	Cancer Care	Malignancies, Random Sample
26	MCE	Medicine	Pulmonary Tuberculosis
NOVEMBER			
2	MCE	Respiratory Therapy	Mechanical Ventilation
9	MCE	Surgery	Burns
15	Process	Pediatrics	Discharge notes
DECEMBER			
5	MCE	OB/Gyn	Urinary Incontinence
14	Process	Medicine :	Discharge content

Mary Louise Centu MARY LOUISE CANTU, RRA

Chief, Medical Record Administration

DISTRIBUTION:

Chief, Dept of Medicine

Chief, Dept of Pediatrics

Chief, Dept of Psychiatry

Chief, Dept of Surgery

Chief, Dept of Nursing

Chief, Cardiothoracic Surgery Svc

Chief, OB/Gyn Svc

Chief, Oncology Svc Chief, Respiratory Therapy Svc

Chief, Nursing Education & Training Svc

DATA RUIRILVAL PACKE IDENTIFICATIONIA APPENDIX C PHOSICIONAL Repord No. :cMCM BRONCHOSCOPY 1 1200 $\mathsf{Sex}_{(M) \in F}$ Committee: MCE SUBCOMMITTEE-MEDICINE Ago Dept/Serv: Committee Asst. A. C. GARZA, RRA Other. MARCH 1973 Units Words: AUDIT ORHERIA DATA 1.1.515 CRIT ELEMENTS NOIES C/A EXCEPTIONS OR CRITICAL MANAGEMENT. 100/01 11 11x 10x 1 BRONCHOSCOPY: 100 A. Abnormal CNR. B. Hemoptysis. C. Problems related to upper airway disease. D. Suspicious sputum cytology. E. Procedure to clear secretions from airways. F. Aspiration. G. Foreign body evaluation. H. Evaluation of thermal or inhalation injury. PRE-OP EVALUATION TO INCLUDE: Chest X-ray 100 within I week of the procedure. Arterial Blood Gases within 1 week of the 100 procedure. Permit signed. 100 Operative note. 100 Chest film after Trans-Bronchial Biopsy. 100 COMPLICATIONS: 7-12: TABULATION ONLY 7. PostOp Infection (manifested by fever spike, 0 new infiltrate on CXR within 24 hr of proced.) Hemoptysis. Pneumothorax. ō 10. Untoward cardiovascular reactions (shock, arrest, hypertensive crisis). 11. Drug reactions. (anaphylaxis, urticaria) 12. Laryngospasm. 0 COMMENTS: 41

£ 82 4	COT ELEMENTS COT ELEMENTS COT EXCEPTIONS OR CRITICAL MANAGEMENT 1. BROXCHOSCOPY: A. Abnormal CRR. B. Herophysis. C. Problems related to upper alrusy disease. D. Suspicious sputum cytology.	GS № 80 1	포랑 2 %	UDIT TOPK	AUDIT TOPIC: BRONCHOSCOPY ORIFO ACICLE B OM Record No.	SCO PY VARIA	VARIATION REPORT Data Remova Notes	** - *** - **	No Records Reviews 1 1/4/4/LD ves No	25 Inpatient VARIATION ANALYSIS Recton
.;	E. Procedure to clear secretions from airways. C. Foreign body evaluation. Chest K-ray within I week of the procedure.	100 . 23		256	# # # 52	Cannot CXR: Ii	Gannot assess when CXR taken, CXR: 12 Oct; Adm to hosp:25 Oct:♪1	• 1 wk.		
ë.	Arterial Blood Gases within lweek of the pro- 100 10 cedure.	001	10 40%		#2,#6-#10, From #12,#13,#14,sess #11,#22,#23,#25, #11,#19 Brot	From i. 14, sess w 23,#25. Bronchd done pi	12,46-#10, From inpatient documentation, cannot as- #12,#13,#14,sess whether ABGs done PTA. #17,#22,#23,#25. #17,#11 ABG: 28 Oct; Bronch: 8 Nov 7 1 wk. #19 Bronchoscoped X 2; no docum of ABGs done prior to procedure of 6 Oct 77.	ot 88- wk. Gs		
	Permit signed.	80	796 92	29	‡	No per	No permit filled in the record.			
٠,	Operative note.	100 25		1001						
.	Chest film after Trans-Bronchial Biopsy.	100	25	1001 20						
7.	CC:/FLICATIONS: (Tabulation Only) Post-op Infection.	0	, 00	7.8			٠			
æ	Hernoptysts. 7	•	0,00	· · · · · ·		- • •				
	Penumothorax.		1 47		-	. -				
10.	16. Untoward cardiovascular reactions.	•	27 7	12.8 72	-					
	li. Drug reactions.	0	0 02	 						
2	12. Laryngospasm.	0	20							

0/15

1/2

) done, but after Bronchoscopy. assess whether ABG done prior to surgical

APPENDIX E

7.Post-op Infection.

8. Hemoptysis. A

9. Preumothorax.

11. Drug reactions.

12. Laryngospasm.

5. Operative note.

i. Permit signed.

S Apriguishment 2:

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APPENDIX F

DISPOSITION FORM

For use of this farm, see AR 340-15; the propanent agency is The Adjutant General's Office

S: 1 Mar 78

REFERENCE OR OFFICE SYMBOL

SUBJECT

AFZG-MDZ-X

Questionnaire on Audit Activities

TO SEE DISTRIBUTION

Deputy Commander, BAMC DATE 16 Feb 78

MAJ Bories/bg/3225

- 1. The attached questionnaires have been prepared by the Health Care Administrative Resident to assist in an effort to establish a system for accurately recording the number of man-hours expended on audit activities within BAMC.
- 2. Your assistance is requested in assuring that the questionnaires are disseminated to those individuals in your activity who take part in any phase of the audit process at BAMC. The completed forms should be returned to the Executive Officer, ATTN: Health Care Resident, not later than 1 March 1978.

Incls as

ANDRE J / OXIVIBENE, M.D.

COL, MC

Deputy Commander

DISTRIBUTION:

C, Prof Svc (4)

Crd, Dental Activity (15)

- C, Dept of Medicine (50)
- C, Dept of Nursing (20)
- C, Dept of OB/GYN (15)
- C, Dept of Pediatrics (15)
- C, Dept of Psychiatry (15)
- C, Dept of Radiology (15)
- C, Dept of Surgery (50) C, Health & Environment (4)
- C, Dept of Pathology (8)
- C, Pharmacy Svc (5)
 C, Physical Medicine Svc (10)
- C, Social Work Svc (10)
- C, Patient Admin Div (10)

AUDIT QUESTIONNAIRE

This questionnaire is a portion of a study which is designed to develop a procedure for accurately recording the total number of man-hours expended on audit activities at Brooke Army Medical Center. This is an item of interest to the BAMC Commander, and the study is being accomplished so that he can have information on these activities readily available.

The ultimate goal of the study is to recommend a system that will produce accurate statistics without imposing an excessive administrative burden on the participants.

Accordingly, we are seeking your input into the study as a potential or actual participant in the audit process at BAMC. Please complete the questionnaire and return it to the Executive Officer, ATTN: Health Care Resident, as soon as possible but not later than 1 March 1978.

Your cooperation is appreciated.

Plea	ase check the appropriate	blanks.
1.	What is your employment	tatus?
	Military officer Military enlisted Civilian	
2.	Which of the following c	tegories best typifies your duty position?
	Staff Physician Resident Intern Dietitian Social Worker Psychologist Occupational Therapist Physical Tnerapist Dentist Nurse Pharmacist Med Records Specialist Secretary Clerk-Typist Other	(Please specify below)
year to	<pre> ^? (i.e., audits of spec </pre>	formal audit activities at BAMC in the past fic diseases/procedures which are reported please do not answer questions 4-9; return d.
	Yes No	
4.	Is your involvement in a	dit
	or	i.e., setting criteria, participating in meetings)(i.e., obtaining and checking records, typing)
5. aud	Please estimate how many it-related activities?	hours per month you are currently expending in
	1 - 5	10 - 20
	5 - 10	20 +

6. Are you keeping a record of the number of hours you spend in such activities?
Yes (Please describe briefly) No
7. In your opinion, should the reporting of audit man-hours be accomplished as a part of the audit itself or included in the figures that are accumulated for manpower and force development purposes?
Included in audit Included in manpower figures
8. Who is in the best position to document such figures?
Committee chairman Committee recorder Each participant PAD personnel Secretarial staff
9. In your opinion, what is the best vehicle for reporting the time \underline{you} spend in audit activities?
Notation on an existing form used in the audit Notation on an existing form used for manpower reporting Notification on a separate form Telephonic reporting to a designated individual

COMMAND POLICY						
1. SUBJECT						
Man-hour and Workload Data						
2. FUNCTIONAL FILE NUMBER 3. MASTER POLICY NUMBER						
103-05 Policy and Precedent File						
4. ORIGINATING SECTION 5. ORIGINATOR 6. PHONE NUMBER						
Force Dev Div, BAMC Robert E. Battey Chief, Force Dev Div, BAMC 221-2846						
7. DATE PREPARED 8. DATE ESTABLISHED 9. APPROVED						
Brigadier General, MC, Commanding						
10. SYNOPSIS: (If more space is needed, use reverse side)						
a. Accurate man-hour and workload data is essential for documenting manpower requirements on Schedules X. Twelve months of data are required for both interim and manpower survey purposes. It is virtually impossible to reconstruct man-hour and workload for an entire year if the information is not maintained on a continuous basis. The value of accurate, timely man-hour and workload data is not limited to Schedule X preparation. It can and should be used by managers to monitor manpower and workload imbalances and shift resources accordingly. b. Effective immediately, all functional areas for which Schedules X are prepared will begin maintaining man-hour and workload data on a continuous basis. It is recommended that BAMC Form 240, Manhour Utilization Record, be used to document actual strength and man-hours worked for both ass gned and other personnel. Workload data should be documented monthly and expressed in terms of work units as defined in appropriate staffing guides (i.e., DA Pamphlet 570-557, Staffing Guide for US Army Medical Department Activities, and DA Pamphlet 570-551, Staffing Guide for US Army Garrisons). Areas or positions for which there are no existing staffing guide yardsticks should identify and maintain appropriate functional workload data. c. Assistance may be obtained from BAMC Force Development Division, 2846/2217.						
11. TYPE POLICY	2. IDENTIFY POL	CY AFFECTED				
X NEW CHANGE REVOCATION 13. DIRECT: VE ON WHICH BASED (Show Date, Subject, and Origin) DA Pam 570-557 and DA Pam 570-551 14. LEGAL OR OTHER REFERENCES						
None		50				
15. DISTRIBUTION A plus 1	to Cdr, BAMC	(Ms. Miller)	16. DATE PUBLISHED			
155 to Sgt Parker, 1	to Adj, BAMC,	20 to Stock	5 Apr 78			

BAMC Form 468 1 May 77

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TELEPHONE INTERVIEWS

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- Dotson, Philip L. Fort Gordon, Georgia. Telephone Interview, 13 February 1978.
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PUBLIC PRESENTATION

Williams, Francis. Joint Commission on Accreditation of Hospitals. Summation conference at Brooke Army Medical Center, Fort Sam Houston, Texas. 28 March 1978.

